Title: User's mobility history-based mobility prediction in LTE femtocells network

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Abstract: Seamless and fast handover is one of main goals in Long Term Evolution (LTE) in supporting mobility and maintaining user's quality of services. Mobility prediction is a technique to identify future targeted base station in advance, to reduce handover latency, and finally to enhance handover performance in wireless networks. In this paper, mobility prediction via Markov Chains with an input of user's mobility history is proposed as a technique to predict the user's movement in femtocells deployment. The results show that our proposed method predicts better when random data is 50% and above compared to the existing method. We had also analysed the effect of unavailable base station to the accuracy of the prediction in our proposed method. From the analysis, it is found that, the length of time collecting the data for the database effect the prediction accuracy in certain duration.